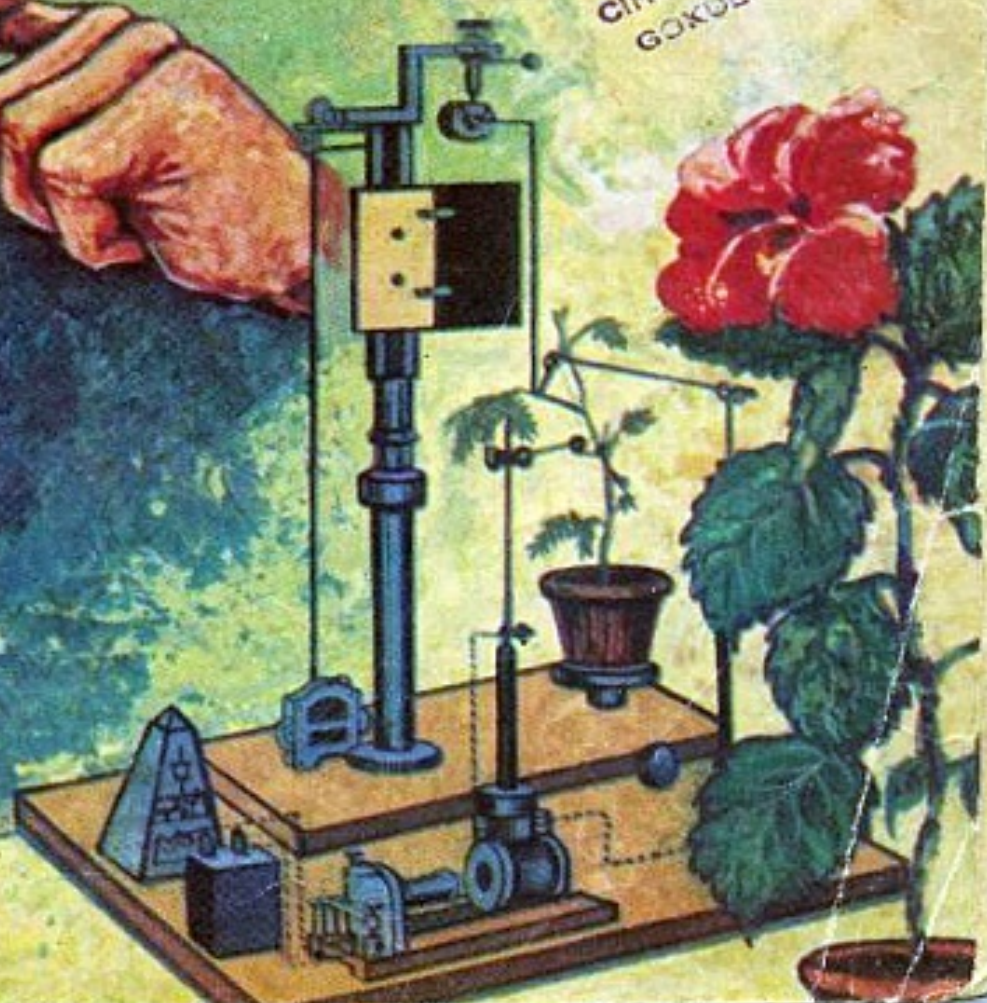
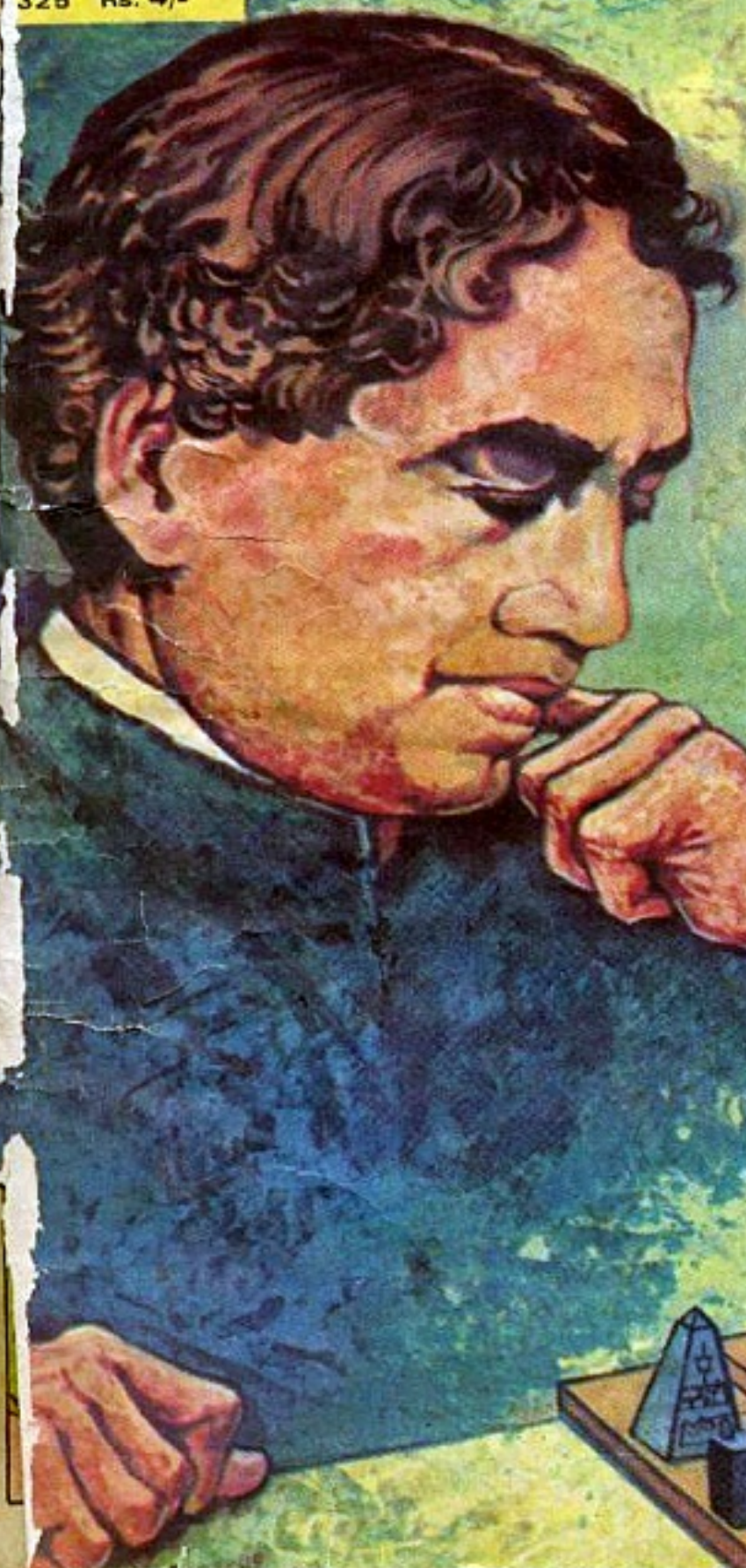




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# JAGADIS CHANDRA BOSE



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# **Amar Chitra Katha**

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Published by:

**H. G. MIRCHANDANI**

for IBH Publishers Pvt. Ltd.,

Mahalaxmi Chambers,

22, Bhulabhai Desai Road,

Bombay 400 026 and printed by him

at IBH Printers, Marol Naka,

Mathuradas Vissanji Road,

Andheri (East), Bombay 400 059.

© IBH Publishers Pvt. Ltd.,

Bombay 400 026.

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Distributors in U. S. A.

Admans Enterprises Inc.

1123 Broadway Suite 1010

New York N.Y. 10010

Subscription: (in India only)

Rs. 48/- for 12 issues and Rs. 96/-

for 24 issues. (Add Rs. 5/-

for outstation cheques).

Sole Authorised Agency for

Subscriptions: Partha Books Division,

Nav Prabhat Chambers,

Ranade Road, Dadar,

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## **Jagadis Chandra Bose**

Jagadis Chandra Bose (1858-1937) was the first Indian scientist in modern times to have won international recognition. Gifted with a mind that was at once inquisitive and discerning, Bose wondered about the how and why of things from a very young age.

All along, he kept himself abreast of scientific and technological developments in the west. With Marconi—who at about the same time worked independently halfway across the globe—he laid the foundations of radio broadcasting.

Though he began with experimental physics, his innate interest in living beings veered him towards the science of biophysics. He invented extremely sensitive instruments that could detect and measure the responses of living organisms to external stimuli.

However a verdict on the validity of much of his pioneering work in Biophysics will have to wait. For, as the 1945 edition of 'Enclopaedia Britannica' wrote: "His work was so much in advance of his time that its precise evaluation was not possible."

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# JAGADIS CHANDRA BOSE



1862, FARIDPUR: A BOY OF FOUR LOOKED UP AT THE SKY ...

... AND TURNED TO HIS FATHER.

BABA, I SAW SO MANY STARS IN THE SKY LAST NIGHT. BUT NOW THEY ARE GONE.



WHERE HAVE THEY GONE, BABA?



THEY HAVEN'T GONE ANYWHERE, SON. WE CANNOT SEE THEM BECAUSE THE SUN'S LIGHT IS BRIGHTER.



BABA, WHY ARE PLANTS ALL GREEN? BIRDS AND ANIMALS HAVE SO MANY COLOURS.

TO TELL YOU THE TRUTH, I DON'T KNOW.



WHEN YOU GROW OLDER TRY TO FIND OUT WHY.

THE BOY WHO ASKED QUESTIONS WAS JAGADIS CHANDRA BOSE WHO LATER BECAME THE FIRST INDIAN IN MODERN TIMES TO WIN INTERNATIONAL ACCLAIM AS A SCIENTIST.



JAGADIS'S MOTHER, BAMASUNDARI, WAS A TRADITIONAL HINDU WIFE AND A LOVING BUT STRICT MOTHER.



JAGADIS LIKED TO LISTEN TO THE STORY OF KARNA AGAIN AND AGAIN.



WHEN THE STORY-TELLING WAS OVER, BAMASUNDARI ASKED HIM THE USUAL QUESTION.



JAGADIS WAS THE PET OF THE BOSE HOUSEHOLD AND HE KNEW IT.



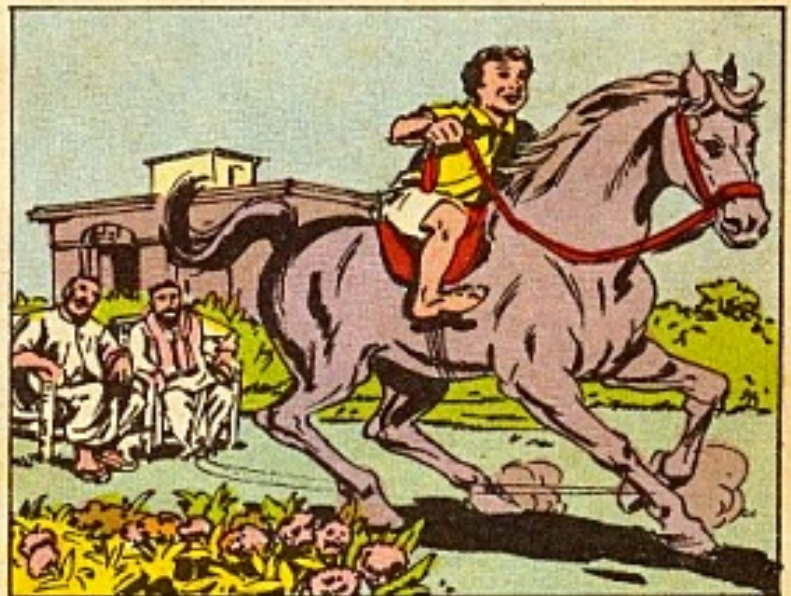
JAGADIS' FATHER, BHAGWAN CHANDRA BOSE, WAS THE DEPUTY MAGISTRATE OF FARIDPUR. HE WAS A GREAT LOVER OF SPORT.

NOW ISN'T THAT  
A TOUGH JOB FOR  
A FIVE-YEAR-  
OLD? WHY DO  
YOU LET HIM  
DO IT?

A LITTLE STRENUOUS  
EXERCISE IS GOOD FOR  
A GROWING BOY'S LIMBS.



LOOK! HE'S  
MOUNTING THE  
PONY! HE'LL FALL  
OFF!



YOUR SON, IS  
SMART... JUST LIKE  
AN ENGLISH BOY!



BHAGWAN CHANDRA GENTLY CORRECTED  
HIS FRIEND.

HE IS SMART LIKE  
ANY OTHER  
INDIAN BOY.









WHILE OTHER CHILDREN WERE CONTENT WITH SCHOOL WORK, JAGADIS, EVER CURIOUS ABOUT NATURE, WAS ALWAYS RUNNING OFF TO GAZE AT THE FIELDS, THE WOODS, THE RIVER.



IS THE PLANT GREEN ALL THROUGH?



OH! IT'S GREEN ONLY TILL THE ROOTS THEN IT STOPS BEING GREEN. I WONDER WHY.



WHAT A BEAUTIFUL CREATURE! I'LL CATCH IT FOR THE POND IN MY GARDEN.



SOON —

JAGADIS WHERE HAVE YOU... E-E-E-E-K!

I CAUGHT IT.



IT'LL BITE YOU. IT'S POISONOUS.

IT ISN'T! THAT'S WHY IT'S MY PET NOW!



THROUGHOUT HIS LIFE JAGADIS LOVED ANIMALS AND BIRDS. TILL HE WENT UP TO COLLEGE HIS PETS RANGED FROM SNAKES AND FROGS TO SHEEP!



WHEN JAGADIS WAS TEN, HIS FATHER WAS TRANSFERRED TO BURDWAN AS AN ASSISTANT COMMISSIONER.

BAMASUNDARI, I HAVE DECIDED THAT JAGADIS SHOULD NOW GO TO AN ENGLISH SCHOOL AT CALCUTTA. HOSTEL LIFE WILL MAKE HIM SELF-RELIANT AND STRONG.



THE CHANGE FROM THE COSY WARMTH OF HIS TRADITIONAL INDIAN HOME TO A HOSTEL OF BLUNT, BOISTEROUS STUDENTS MADE JAGADIS MISERABLE AND HOMESICK.



THE FIRST FEW DAYS AT SCHOOL WERE PARTICULARLY BAD FOR THE SENSITIVE BOY. HE DID NOT KNOW WESTERN MANNERS AND HE COULD BARELY SPEAK ENGLISH.











OVER THE NEXT FEW WEEKS HE MADE A GARDEN IN THE HOSTEL, COLLECTED A FEW PETS AND SOON BEGAN TO ENJOY SCHOOL AND HOSTEL LIFE.





AT THE END OF TERM JAGADIS RETURNED HOME TO BURDWAN FOR HIS HOLIDAYS.



JAGADIS STARTED SPENDING MOST OF HIS TIME IN THE WORKSHOP.



BUT WHAT FASCINATED HIM MOST WAS THE FOUNDRY.









JAGADIS FINISHED SCHOOL AT SIXTEEN AND JOINED ST. XAVIER'S COLLEGE. THERE HE FELL UNDER THE SPELL OF FR. LAFONT, THE RECTOR OF THE COLLEGE AND THE BEST PROFESSOR OF PHYSICS IN INDIA IN THOSE DAYS.



FR. LAFONT ON HIS PART SAW GREAT PROMISE IN HIS STUDENT AND ENCOURAGED HIM IN THE STUDY OF PHYSICS.

THREE DELIGHTFUL YEARS OF COLLEGE FLEW PAST. THEN AT THE END OF TERM—



JAGADIS ACCEPTED THE INVITATION AND CAME BACK AN EXPERT IN BIG-GAME HUNTING AND WITH A MILLION SAND-FLY BITES!

WHEN THE NEXT VACATION CAME ROUND, ANOTHER FRIEND INVITED HIM, TO ASSAM THIS TIME, FOR THE SAME SPORT.



\* ABOUT 34 KM.



ALIGHTING AT THE ASSAM RAILWAY STATION HE HAD TO TRAVEL OVERNIGHT BY PALANQUIN TO REACH HIS FRIEND'S HOUSE.



AS SOON AS HE REACHED, HE AND HIS FRIEND LEFT FOR THE FORESTS AND SPENT THE WHOLE DAY THERE.

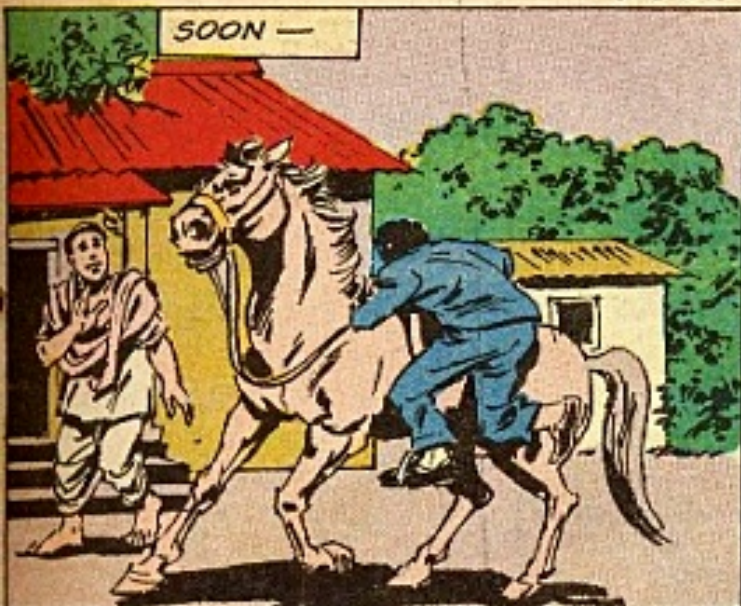


THAT EVENING —





SOON —

TAKE CARE,  
BOSE!

SEVEN MILES LATER —



FOURTEEN MILES LATER —

PHEW! HE'S SLOWED  
DOWN. HE'S TIRED.  
THANK GOD!WHEN JAGADIS FINALLY BOARDED THE  
TRAIN FOR CALCUTTA HE WAS EXHAUSTED.THE FEVER DOGGED HIM IN CALCUTTA AND  
DID NOT RESPOND TO ANY MEDICINE.I'M SORRY, BOSE.  
I DON'T THINK  
YOU CAN APPEAR  
FOR YOUR EXAM  
THIS YEAR.JAGADIS LOST A YEAR AND GRADUATED  
IN 1879 IN THE SECOND DIVISION.



HE RETURNED HOME WITH PLANS TO GO ABROAD FOR FURTHER STUDIES.



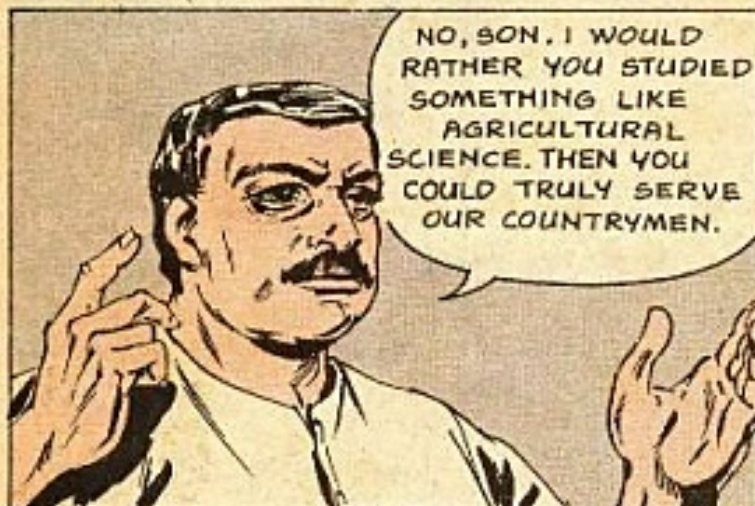
FATHER, I WOULD LIKE TO GO TO ENGLAND AND TRY FOR THE I.C.S.

TO BECOME AN ADMINISTRATION?

TO BECOME A CIVIL SERVANT, AND SERVE THE BRITISH GOVERNMENT?



NO, SON. I WOULD RATHER YOU STUDIED SOMETHING LIKE AGRICULTURAL SCIENCE. THEN YOU COULD TRULY SERVE OUR COUNTRYMEN.



JAGADIS FINALLY DECIDED TO STUDY MEDICINE AND LEFT FOR ENGLAND IN 1880.

HE JOINED THE UNIVERSITY OF LONDON AND MADE A GOOD START. THEN ONE DAY IN THE ANATOMY ROOM —

HEY! WHAT'S THE MATTER WITH BOSE?



WHAT'S WRONG BOSE?

I... IT'S THE ODOUR HERE. I FEEL SICK.



BOSE, YOU'RE BURNING WITH FEVER!

LET'S TAKE HIM TO HIS ROOMS.



IT WAS AN ATTACK OF THAT UNIDENTIFIED FEVER. AFTER A FEW DAYS' REST HE FELT BETTER.



WHEN HE TRIED TO DO WORK AGAIN IN THE ANATOMY ROOM, HOWEVER, HIS FEVER RECURRED. AT LAST —

MR. BOSE, I'M SORRY BUT I'M AFRAID YOU'LL HAVE TO GIVE UP THE STUDY OF MEDICINE. YOU ARE ALLERGIC TO THE ODOURS OF THE ANATOMY LAB.

SO BOSE GAVE UP MEDICINE AND TOOK UP THE NATURAL SCIENCE COURSE AT CAMBRIDGE. HIS PHYSICS PROFESSOR THERE WAS LORD RAYLEIGH, A LEADING SCIENTIST OF THE TIMES.

HOW FASCINATING IS THE WORLD OF ENERGY AND MATTER AND THEIR INTERACTION! AND PROF. RAYLEIGH MAKES IT ALL SOUND SO SIMPLE AND CLEAR.

HE HAS THE SAME APPROACH TO THE SUBJECT AS FR. LAFONT.

AT CAMBRIDGE HIS FEVER VANISHED AND NEVER AGAIN TROUBLED HIM.

HE TOOK HIS DEGREE (TRIPOS) IN THE NATURAL SCIENCES IN 1884 WITH PHYSICS, CHEMISTRY AND BOTANY...

... AND SIMULTANEOUSLY TOOK A B.SC. DEGREE FROM THE UNIVERSITY OF LONDON AS IT DID NOT REQUIRE ANY EXTRA WORK.

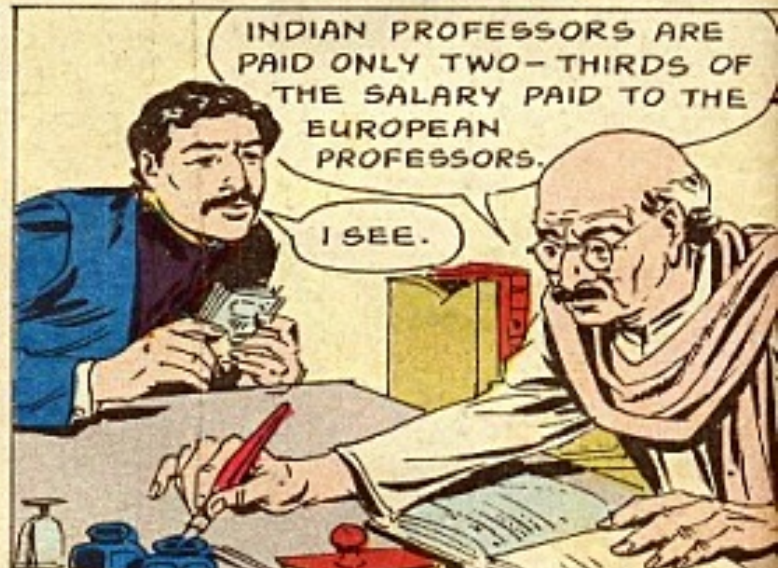


HE RETURNED TO INDIA AND FOUND THAT HIS FATHER HAD MADE SOME MISCALCULATIONS AND RUN UP HUGE DEBTS.

IN 1885, BOSE SECURED THE POST OF PROFESSOR OF PHYSICS AT PRESIDENCY COLLEGE IN CALCUTTA.



BUT SOMETHING HE DISCOVERED ONLY LATER MADE HIM VERY UNHAPPY.





PROF. BOSE'S THEN NOVEL WAY OF PROTESTING PERPLEXED HIS COLLEAGUES.

YOU CONTINUE TO TEACH BUT REFUSE THE SALARY. ISN'T IT FOOLISH?

IT IS A MATTER OF HONOUR TO TEACH AT THIS COLLEGE. SO I TEACH.

WHAT I OBJECT TO IS DISPARITY IN PAY ON RACIAL GROUNDS.

I WILL ACCEPT THE SALARY THE DAY THE COLLEGE KNOWS NO RACIAL DISTINCTION.

SO, THOUGH HE NEEDED THE MONEY, BOSE REFUSED THE SALARY. INSTEAD HE SOLD SOME OF THE FAMILY'S ANCESTRAL PROPERTY TO REPAY HIS FATHER'S DEBTS.

IN 1887 BOSE WAS MARRIED TO ABALA, THE DAUGHTER OF BHAGWAN CHANDRA'S FRIEND.

SHE HAS STUDIED MEDICINE UP TO THE FOURTH YEAR AND IS INTERESTED IN SCIENCE. SHE'LL MAKE AN EXCELLENT WIFE AND COMPANION FOR BOSE.

THIS PREDICTION PROVED TO BE VERY TRUE.



MEANWHILE BOSE WAS GETTING TO BE POPULAR WITH THE STUDENTS.

COME ON, LET'S HURRY. IT'S PROF. BOSE'S CLASS. WE WON'T BE ABLE TO SIT IN THE FIRST ROW IF WE ARE LATE.



THOUGH IT TOOK THREE YEARS, BOSE'S PROTEST FINALLY MADE ITS IMPACT AND A COMMON PAY SCALE WAS INTRODUCED.

BOSE! YOU HAVE WON! CONGRATULATIONS.

THANK YOU.



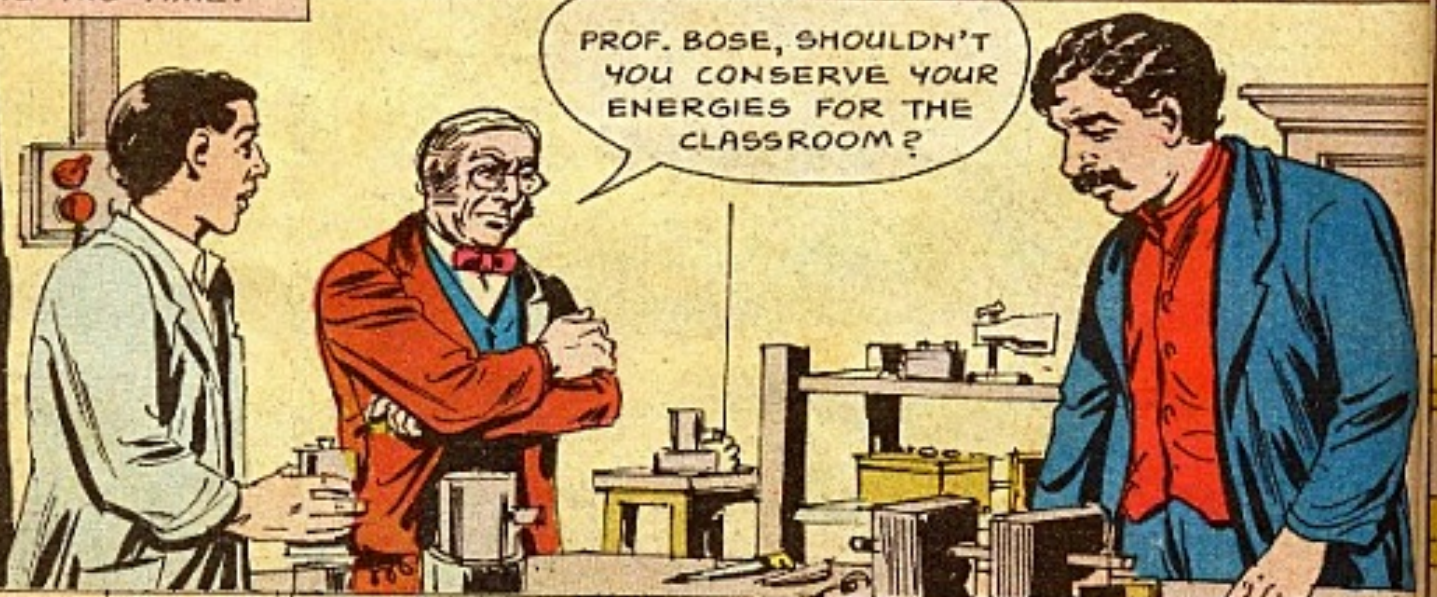
BOSE WAS GIVEN THE REVISED SCALE OF PAY WITH RETROSPECTIVE EFFECT.

IN THE NEXT FEW YEARS, BOSE SPENT MUCH OF HIS SPARE TIME IN THE COLLEGE LABORATORY. SPENDING HIS OWN MONEY AND USING HIS FINE ENGINEERING SKILL HE MADE MANY OF THE INSTRUMENTS HE NEEDED.



INSTEAD OF APPRECIATING HIS WORK THE COLLEGE AUTHORITIES FELT HE WAS WASTING HIS TIME.

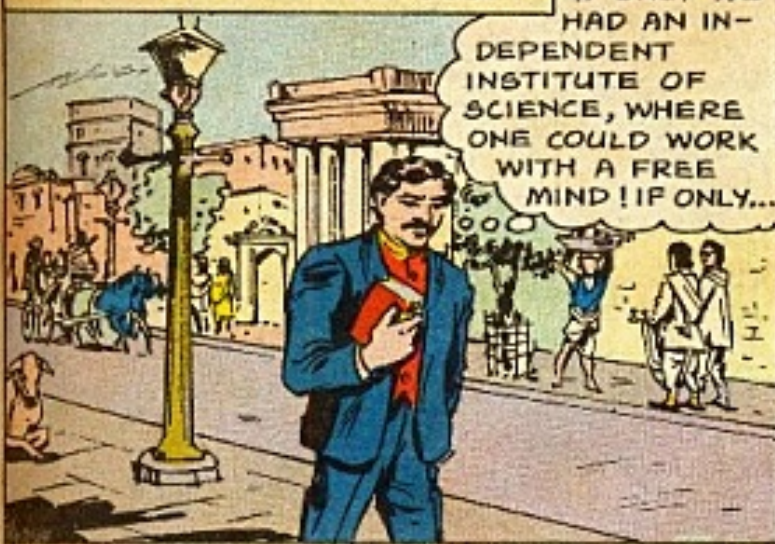
PROF. BOSE, SHOULDN'T YOU CONSERVE YOUR ENERGIES FOR THE CLASSROOM?





THIS ATTITUDE PAINED BOSE.

IF ONLY WE HAD AN INDEPENDENT INSTITUTE OF SCIENCE, WHERE ONE COULD WORK WITH A FREE MIND! IF ONLY...



AT HOME HOWEVER IT WAS DIFFERENT. ABALA TOOK A KEEN INTEREST IN HIS RESEARCH WORK AND ACTIVELY ENCOURAGED HIM WHEN HE FELT LOW.

HERTZ HAS SUCCEEDED IN PRODUCING RADIO WAVES IN HIS LAB IN EUROPE. HOW EXCITING IT WOULD BE TO STUDY THIS FORM OF ENERGY!



THE WORLD TODAY KNOWS SO LITTLE ABOUT THE PROPERTIES OF THESE WAVES.



WHY DON'T YOU MAKE AN INSTRUMENT LIKE HERTZ'S AND STUDY THESE WAVES IN YOUR LAB HERE IN INDIA?



THE SUGGESTION APPEALED TO BOSE, AND HE IMMEDIATELY STARTED WORK ON THE PROJECT.

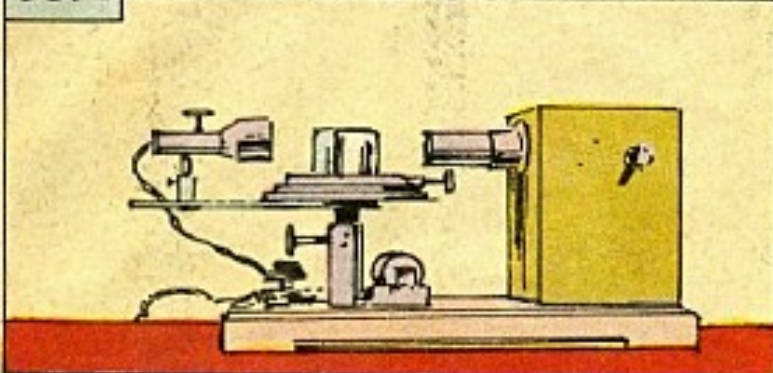
WITH HIS OWN ENGINEERING SKILL AND THE ASSISTANCE OF A TIN-SMITH HE HAD TRAINED, HE FINALLY SUCCEEDED IN MAKING THE EQUIPMENT.

NOW I CAN PLAN MY EXPERIMENTS.





BOSE'S EQUIPMENT WAS A SCIENTIFIC MARVEL. THE COMPACT APPARATUS WAS MUCH SUPERIOR TO THE ONE MADE BY HERTZ. IT COULD PRODUCE RADIO WAVES OF VERY SHORT WAVELENGTHS WHICH NO OTHER APPARATUS COULD HITHERTO DO.



QUANTITATIVE EXPERIMENTS ON THE PROPERTIES OF THESE WAVES WERE NOW POSSIBLE FOR THE FIRST TIME.

THESE ELECTROMAGNETIC WAVES BELONG TO THE SAME GROUP OF ENERGY WAVES TO WHICH LIGHT BELONGS.



SO, LIKE LIGHT WAVES, IT MUST BE POSSIBLE TO POLARIZE RADIO WAVES TOO!



AS THESE WAVES HAVE VERY LOW ENERGY THEY SHOULD TRAVEL LONG DISTANCES WITHOUT BEING DESTROYED. I SHOULD TEST THAT.



AND THUS BOSE DISCOVERED THE CRYSTAL NEMATITE WHICH COULD POLARIZE RADIO WAVES.

HIS EXPERIMENTS ON THIS TOO GAVE HIM POSITIVE RESULTS.

IN 1895 HE GAVE A PUBLIC DEMONSTRATION OF HIS DISCOVERIES IN CALCUTTA.

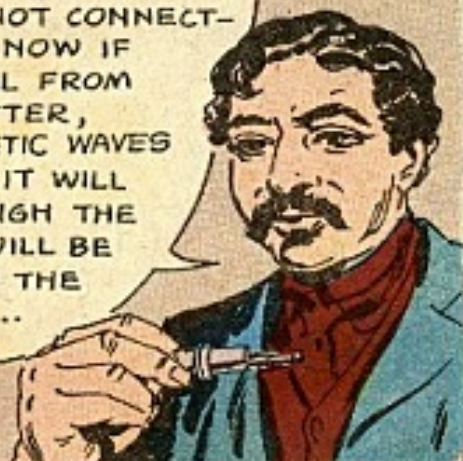
GENTLEMEN, I HAVE SHOWN YOU THE TRANSMITTER PLACED IN THE OTHER ROOM, 75 FEET\* AWAY FROM US.



\* ABOUT 23 METRES



THIS IS THE COHERER\*. YOU CAN SEE THAT THE COHERER AND THE TRANSMITTER ARE NOT CONNECTED BY WIRES. NOW IF I GIVE A SIGNAL FROM THE TRANSMITTER, ELECTROMAGNETIC WAVES PRODUCED BY IT WILL TRAVEL THROUGH THE WALLS AND WILL BE PICKED UP BY THE COHERER...



... AND THIS BELL WILL RING HERE.



AS SOON AS BOSE WENT TO THE OTHER ROOM AND GAVE THE SIGNAL —



THE AUDIENCE WAS ASTOUNDED.

IT IS POSSIBLE TO SEND SIGNALS WITHOUT THE AID OF WIRES! IT'S ALMOST LIKE MAGIC...



\* RECEIVER.



BOSE WORKED LONG HOURS IN THE LABORATORY AND YET FOUND TIME TO HELP HIS WIFE IN THE KITCHEN.

THERE, ABALA! ALL YOUR JARS NEATLY LABELLED AND ARRANGED!

YOU JUST HAVE TO LOOK AT THE LABEL AND YOU GET WHAT YOU WANT.

BOSE STARTED WORK ON A PROJECT TO LINK HIS COLLEGE, A KILOMETRE AWAY, WITH HIS HOME BY RADIO. BUT A LETTER FROM THE ROYAL SOCIETY MADE HIM LEAVE HALFWAY.

ABALA, THE ROYAL SOCIETY IS PUBLISHING MY PAPERS.

THAT'S GREAT NEWS! BUT I'M NOT SURPRISED.

I WISH I COULD MAKE A TRIP TO EUROPE AND OBSERVE THE WORK GOING ON THERE IN MY FIELD.

PERHAPS YOU COULD APPLY FOR SOME LEAVE AND PLAN A TRIP.



A FEW DAYS LATER, THE BRITISH ASSOCIATION OF SCIENTISTS INVITED BOSE TO SPEAK AT THEIR LIVERPOOL SESSION.

ABALA, I HAVE BEEN SANCTIONED SPECIAL LEAVE TO ATTEND THE SESSION. WE GO NEXT WEEK.

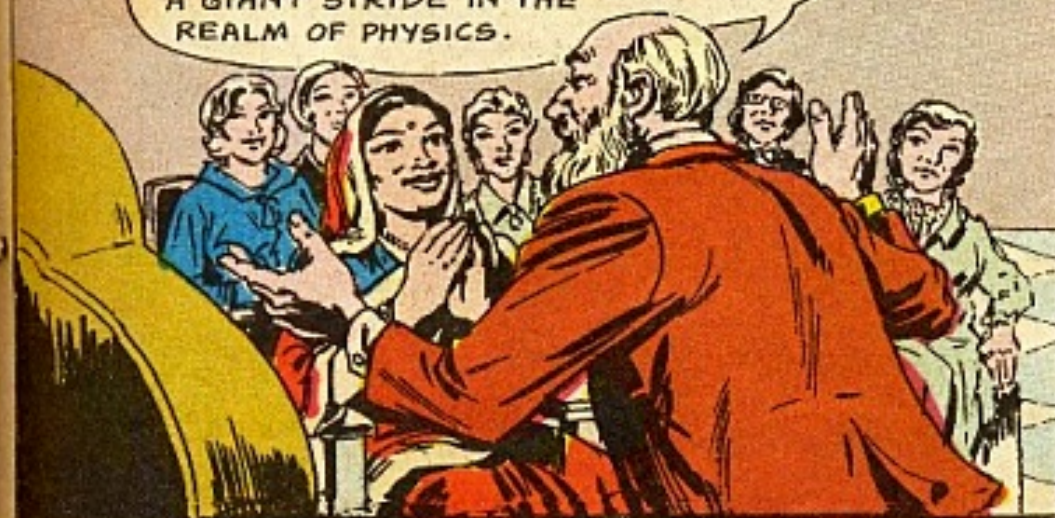


HIS TALK AT LIVERPOOL EARNED HIM THE ADMIRATION AND ESTEEM OF THE EMINENT SCIENTISTS FROM ALL OVER EUROPE WHO HAD ASSEMBLED THERE.



LORD KELVIN WAS SO IMPRESSED THAT HE LIMPED INTO THE LADIES' GALLERY TO CONGRATULATE ABALA.

CONGRATULATIONS, MRS. BOSE. YOUR HUSBAND IS A GENIUS. HE HAS MADE A GIANT STRIDE IN THE REALM OF PHYSICS.



BOSE WAS MUCH SOUGHT AFTER AND HEARD RESPECTFULLY BY THE SCIENTISTS OF EUROPE. NOT EVEN THE BRITISH PRESS, ALWAYS CYNICAL OF INDIANS, COULD WITHHOLD ITS ADMIRATION. THE GOVERNMENT AS A SPECIAL GESTURE EXTENDED HIS LEAVE TO ALLOW HIM TO STAY ON IN ENGLAND.



MANY FIRMS IN EUROPE OFFERED BOSE FABULOUS PRICES FOR THE EXCLUSIVE RIGHTS ON HIS APPARATUS. BUT BOSE REFUSED EVEN TO OBTAIN A PATENT FOR HIS DISCOVERY.

EVEN MY FRIENDS DON'T UNDERSTAND THE REASONS FOR MY REFUSAL.

ABALA, I AM A SEEKER OF KNOWLEDGE. NOT OF THE WEALTH OR FAME THAT KNOWLEDGE CAN BRING.



AND WHATEVER KNOWLEDGE I ACQUIRE BELONGS TO THE ENTIRE WORLD.

THE WEST MAY NOT REALISE THIS, BUT IT IS OUR DUTY TO SHOW THEM THE RIGHT PATH BY OUR STAND.

I FULLY AGREE WITH YOU.



BOSE RETURNED TO INDIA IN 1897 AND CONTINUED HIS RESEARCH ON ELECTROMAGNETIC WAVES.

MANY PROMINENT INDIANS SAW A KINDRED SPIRIT IN HIM AND CAME TO HIS AID. TAGORE WAS ONE OF THEM.

JAGADIS BABU, I AM HAPPY THAT YOU HAVE COME BACK TO INDIA.

I HAVE TALKED TO THE MAHARAJA OF TRIPURA AND HE HAS AGREED TO GIVE YOU A GRANT.





BOSE SPENT ALL HIS TIME ON HIS RESEARCH ON ELECTROMAGNETIC WAVES. ONE DAY —

OH, THE SAME PROBLEM AGAIN. THE RECEIVER HAS LOST ITS SENSITIVITY. NOW I WILL HAVE TO WAIT TILL MORNING TO CONTINUE THIS EXPERIMENT.

THE NEXT DAY —

GOOD, NOW THE RESPONSE IS FINE. ON PROLONGED WORKING ITS SENSITIVITY GOES DOWN AS IF IT WERE TIRED. ON GETTING ENOUGH REST IT REGAINS ITS EFFICIENCY.

IS IT POSSIBLE THAT LIKE LIVING BEINGS METALS ALSO HAVE FATIGUE? SOUNDS IMPOSSIBLE. BUT THAT IS WHAT HAPPENS HERE. BESIDES, INDIAN PHILOSOPHY DOESN'T RULE OUT SUCH A POSSIBILITY.

BOSE WAS THUS DRAWN INTO AN ALTOGETHER NEW FIELD OF INVESTIGATION. AND HE CAME UP WITH SOME STARTLING CONCLUSIONS.

HOW STRANGE. HOW COULD WE SEPARATE THE LIVING AND NON-LIVING MERELY ON PHYSICAL RESPONSE...

IN 1900 THE GOVERNMENT SENT BOSE TO ATTEND THE INTERNATIONAL CONFERENCE OF PHYSICISTS AT PARIS. THERE HE PRESENTED HIS NEW FINDINGS ON THE RESPONSE IN THE LIVING AND NON-LIVING.

...THE LINES OF DEMARCATION BETWEEN THE LIVING AND THE NON-LIVING COULD BE QUITE ARBITRARY.

REMARKABLE! ONLY AN INDIAN MIND COULD HAVE COME UP WITH IT. THIS DISCOVERY IS GOING TO REVOLUTIONISE SCIENTIFIC THINKING ITSELF.



FROM PARIS BOSE WENT TO ENGLAND WHERE HE READ A SIMILAR PAPER BEFORE THE BRITISH ASSOCIATION. HERE TOO IT WAS WELL RECEIVED BUT —



THE PHYSIOLOGISTS DON'T SEEM TO BE TOO HAPPY.

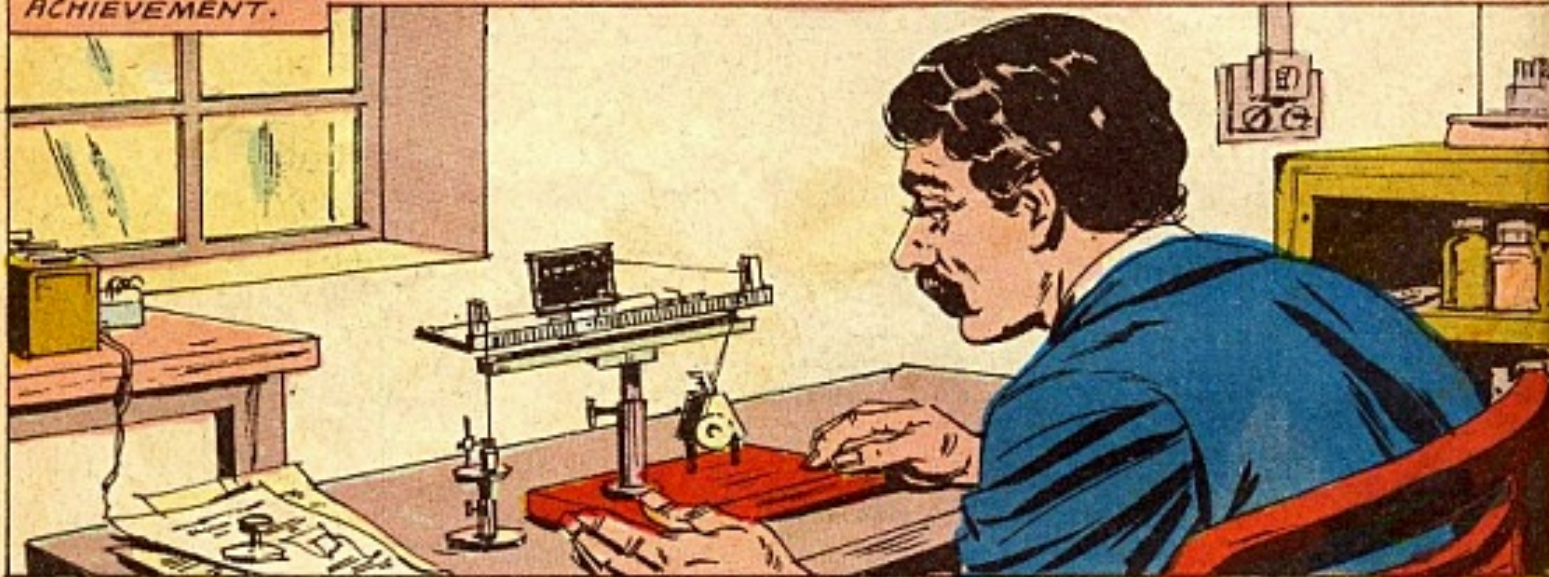
THE PHYSIOLOGISTS WERE NOT. THEY COULD NOT ACCEPT BOSE'S METHOD OF EXPERIMENTATION AS SUCH METHODS WERE NOT RECOGNISED BY THEM.

AT THE INVITATION OF LORD RALEIGH HE STAYED BACK IN LONDON TO DEVISE NEW TECHNIQUES.

I MUST PERFECT AN INSTRUMENT TO RECORD MINUTE RESPONSES. THAT SHOULD BE MY FIRST JOB.

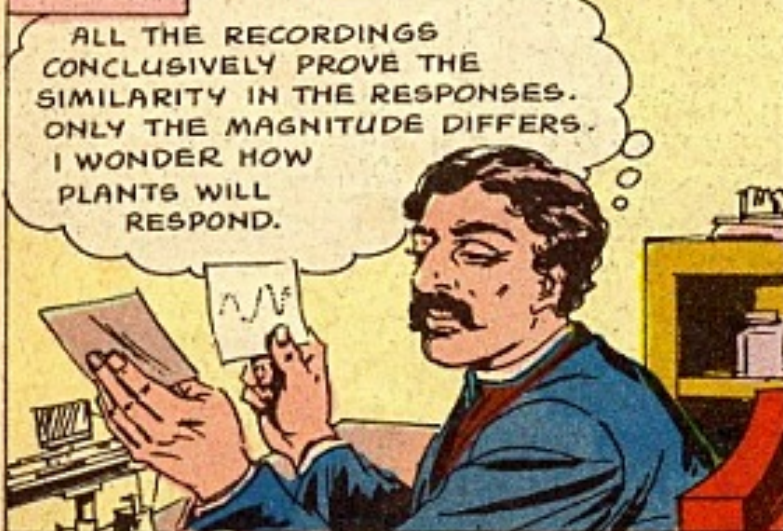


WHAT HE EVENTUALLY DESIGNED FOR THIS PURPOSE WAS THE CRESCOGRAPH WHICH COULD AMPLIFY ANY TINY SIGNAL TO MILLION TIMES. IT WAS A MAGNIFICENT ACHIEVEMENT.



BOSE RECORDED THE RESPONSES OF ANIMALS AND METALS TO DIFFERENT STIMULI.

ALL THE RECORDINGS CONCLUSIVELY PROVE THE SIMILARITY IN THE RESPONSES. ONLY THE MAGNITUDE DIFFERS. I WONDER HOW PLANTS WILL RESPOND.



HE RUSHED TO THE GARDEN AND COLLECTED SOME LEAVES.





ON TESTING THEM HE WAS ASTOUNDED.



PLANTS RESPOND ELECTRICALLY TO ALL KINDS OF IMPULSES, JUST AS ANIMALS RESPOND TO ALL TYPES OF IRRITATIONS.

ACCEPTANCE TO HIS REVOLUTIONARY IDEAS HOWEVER WAS SLOW TO COME.

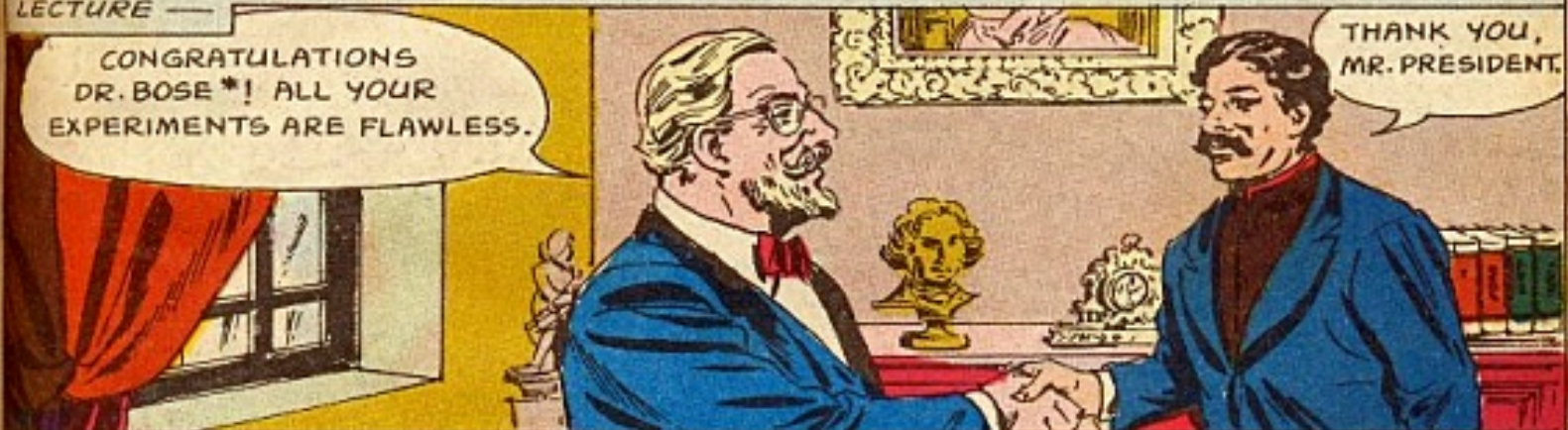
ORDINARY PLANTS RESPONDING TO ELECTRIC STIMULI LIKE ANIMAL TISSUES. IMPOSSIBLE!



BUT BOSE DIDN'T GIVE UP. HIS PAINSTAKING WORK AND METICULOUSLY PLANNED EXPERIMENTS SLOWLY WON HIM RECOGNITION.

IN 1902 HE CONDUCTED A NUMBER OF EXPERIMENTS BEFORE THE LINNEAN SOCIETY GATHERING CONSISTING OF MOST OF HIS CRITICS. WHEN BOSE FINISHED HIS LECTURE —

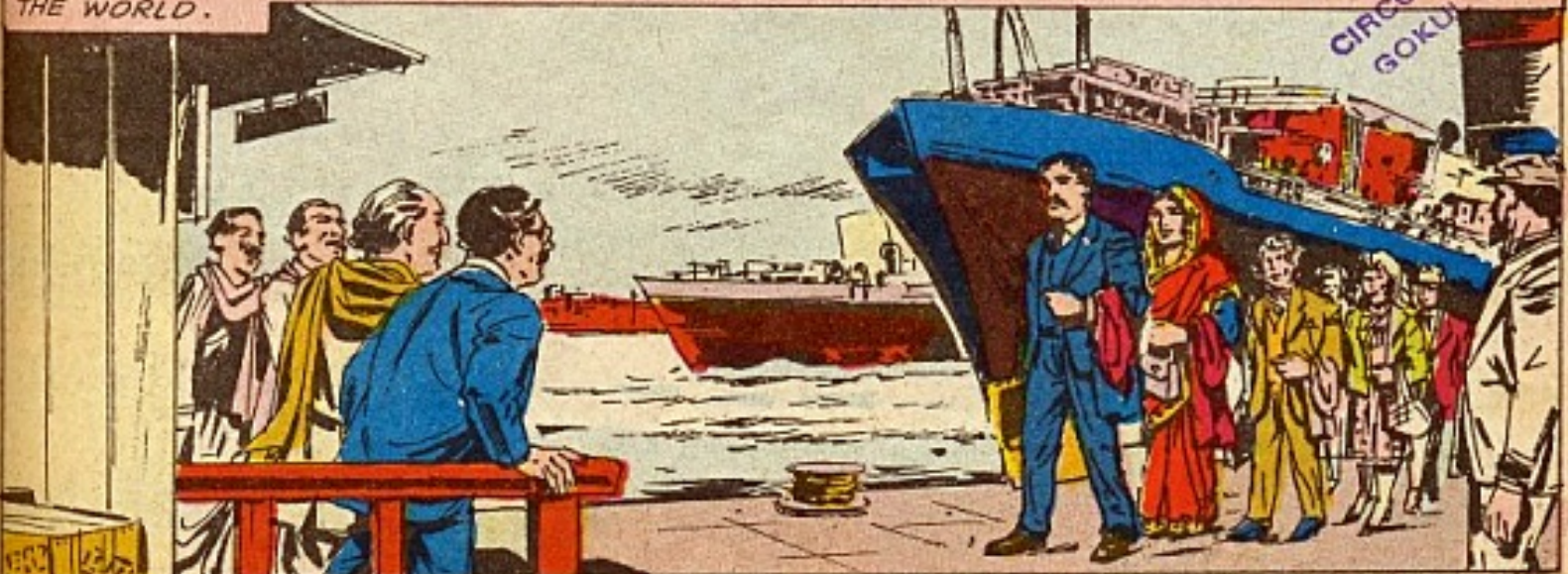
CONGRATULATIONS DR. BOSE \*! ALL YOUR EXPERIMENTS ARE FLAWLESS.



THANK YOU, MR. PRESIDENT.

BOSE'S PIONEERING WORK HAD OPENED UP A NEW BRANCH IN NATURAL SCIENCE — BIOPHYSICS. STUDYING BIOLOGICAL PHENOMENA WITH THE METHODOLOGY OF PHYSICS, WITH ITS ACCURACY AND PRECISION, YIELDED A GREAT DEAL OF NEW INFORMATION ON THE MYSTERIES OF LIFE.

BOSE RETURNED TO INDIA IN TRIUMPH IN OCTOBER 1902. THE ROYAL SOCIETY HAD FINALLY PUBLISHED HIS PAPERS AND HIS DISCOVERIES HAD BEEN ACCEPTED ALL OVER THE WORLD.



\* LONDON UNIVERSITY HAD AWARDED HIM A DOCTORATE IN RECOGNITION OF HIS OUTSTANDING CONTRIBUTION.



BOSE RESUMED HIS DUTY AT PRESIDENCY COLLEGE. FOR ALL HIS SUCCESS AND FAME, HE STILL HAD TO STRUGGLE WITH AN ILL-EQUIPPED LABORATORY.



BOSE NOW DEVOTED ALL HIS TIME TO THE STUDY OF PLANTS. HIS DEVOTION TO HIS WORK WAS SO TOTAL THAT PEOPLE BELIEVED HE COULD EVEN CONVERSE WITH PLANTS.



IN THE MATTER OF A FEW YEARS HE FOUND OUT MORE ABOUT PLANTS THAN ANYONE BEFORE AND PERHAPS SINCE.



HE PUBLISHED HIS DISCOVERIES OF THIS PERIOD IN TWO OF THE MANY BOOKS HE WROTE.



THESE BOOKS CREATED GREAT INTEREST ABROAD AND HIS METHODS AND INSTRUMENTS BEGAN TO BE USED IN UNIVERSITIES ALL OVER THE WORLD.



DESPITE HIS BUSY SCHEDULE HE FOUND TIME TO GO ON LECTURE TOURS ALL OVER THE COUNTRY. ONCE AT MYMENSINGH THE CROWD THAT CAME TO HEAR HIM WAS MORE THAN THE HALL COULD CONTAIN.

MR. BOSE, I SUGGEST WE RESTRICT ADMISSION BY CHARGING A HIGH PRICE FOR THE TICKETS.

NO, PLEASE DON'T.



I'LL GIVE MY LECTURE TWICE — IN ENGLISH TODAY AND IN BENGALI, TOMORROW.

HE RETIRED FROM SERVICE IN NOVEMBER 1915. HE WAS GAZETTED AS PROFESSOR EMERITUS AND WAS PAID A FULL SALARY INSTEAD OF A PENSION.

WHAT ARE YOU GOING TO DO NOW?

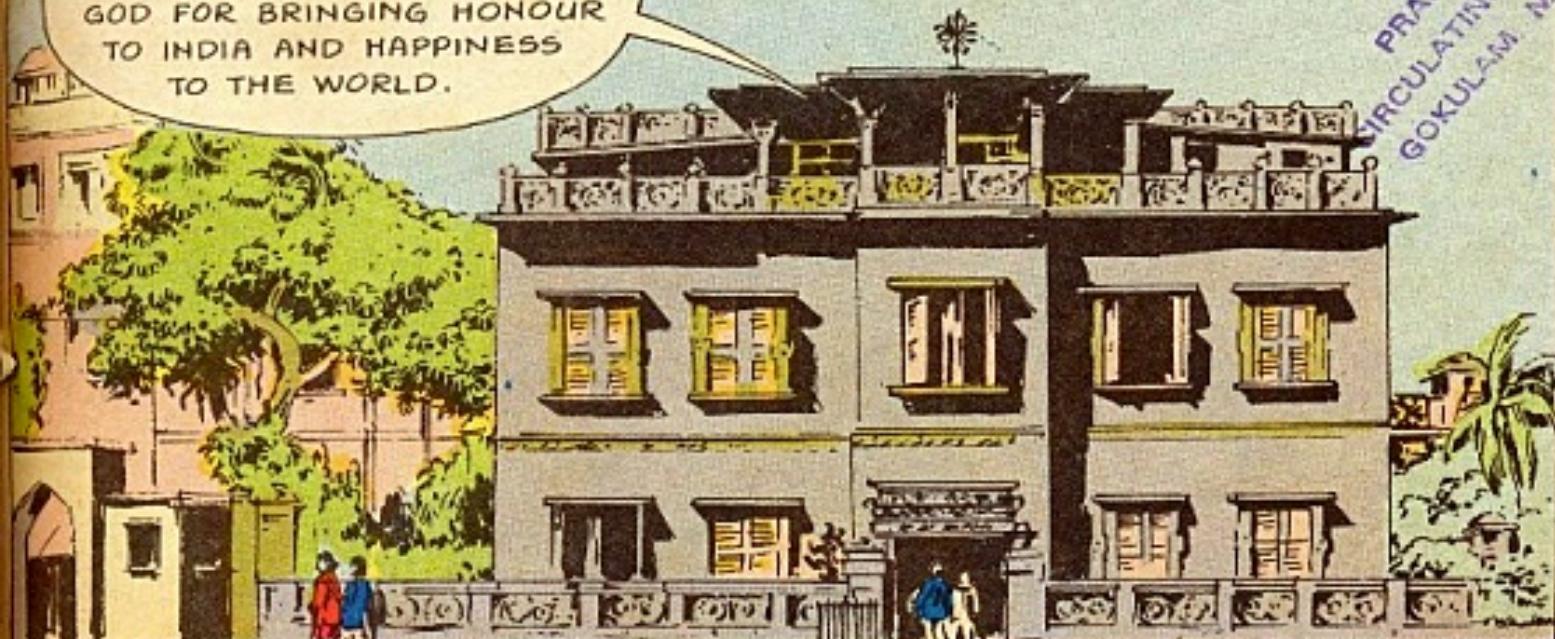
I HAVE ALWAYS WANTED TO ESTABLISH A RESEARCH INSTITUTE. I AM GOING TO WORK TOWARDS IT.



BOSE NEVER TRIED TO CAPITALISE ON HIS FAME OR HIS INVENTIONS.

THE INSTITUTE WAS OPENED ON 30TH NOVEMBER, 1917 ON HIS 59TH BIRTHDAY.

I DEDICATE TODAY THIS INSTITUTE... TO THE FEET OF GOD FOR BRINGING HONOUR TO INDIA AND HAPPINESS TO THE WORLD.



PRASANATH  
CIRCULATING LIBRARY  
GOKULAM, MYSORE





... WELCOME TO ALL WHO SEEK KNOWLEDGE ... IT WILL BE OPEN TO PEOPLE FROM ALL OVER THE WORLD, TO MEN AND WOMEN ALIKE AND FOR ALL TIME TO COME.



AS THE FOUNDER-DIRECTOR, BOSE WORKED AT THE BOSE RESEARCH INSTITUTE FOR THE REST OF HIS LIFE, GUIDING YOUNGSTERS IN RESEARCH.

HE PERFECTED A METHOD OF TRANSPLANTING FULL-GROWN TREES, BY SEDATING THEM.



ALL SORTS OF HONOURS CAME HIS WAY NOW. HE WAS KNIGHTED IN 1917. THREE YEARS LATER, HE WAS ELECTED A FELLOW OF THE ROYAL SOCIETY. AND IN 1931 THE CITIZENS OF CALCUTTA HONoured HIM AT A CIVIC RECEPTION. SUBHAS CHANDRA BOSE, THE THEN MAYOR OF CALCUTTA, HONoured THE SCIENTIST ON BEHALF OF THE CITIZENS.

THIS OUTSTANDING SCIENTIST DIED ON NOVEMBER 23, 1937. WHAT ENCYCLOPAEDIA BRITANNICA WROTE IN 1945 ABOUT HIM IS STILL VALID.

HIS WORK WAS SO MUCH IN ADVANCE OF HIS TIME THAT ITS PRECISE EVALUATION WAS NOT POSSIBLE.



IT DOES NOT SEEM POSSIBLE EVEN TODAY.